

APPLICANT(S): NAFTALI, Matan et al.
SERIAL NO.: Not yet assigned
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Page 3

AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1. (Original) A method for providing a vertical comb drive, the method comprising:

fabricating a device comprising rotor comb element, the rotor element comb comprising a main body and a plurality of substantially parallel extensions in a comb arrangement, and at least one of a plurality of stator comb elements, comprising a main body and a plurality of substantially parallel extensions in a comb arrangement, adapted to be interlaced with the rotor, all on a single layer of a substrate.
2. (Original) The method of claim 1, wherein said at least one of a plurality of stators comprise two, substantially opposite stators, wherein the rotor is located between the two stators.
3. (Original) The method of claim 1, wherein fabricating of the device is done in a micro-machining process.
4. (Original) The method of claim 1, wherein said at least one of a plurality of stators are positioned and secured in position using glue.
5. (Original) The method of claim 1, wherein displacement limiters are used to limit displacement of the rotor.
6. (Original) The method of claim 5, wherein the displacement limiters comprise edges of slits in a surrounding body.
7. (Original) The method of claim 1, wherein the rotor and said at least one of a plurality of stators are each suspended on flexible supports.

APPLICANT(S): NAFTALI, Matan et al.
SERIAL NO.: Not yet assigned
FILED: Herewith
Page 4

8. (Original) The method of claim 7, wherein the flexible supports are used to reposition the rotor with respect to said at least one of a plurality of stators, so as to achieve realignment.
9. (Original) The method of claim 7, wherein the flexible supports have nonlinear kinematic-dependent rigidity.
10. (Currently Amended) The method of claim 1, wherein the rotor is provided with two substantially opposite torsion bars that define a rotation axis substantially substantially near an external surface of the rotor.
11. (Original) The method of claim 10, wherein the external surface is an upper surface.
12. (Original) The method of claim 11, wherein the external surface is a bottom surface.
13. (Original) The method of claim 1, wherein the thickness of the extensions of said at least one of a plurality of stators is greater than the thickness of extensions of the rotor.
14. (Original) The method of claim 1, wherein the rotor is positioned in an elevated position with respect to said at least one of a plurality of stators.
15. (Original) The method of claim 1, wherein the rotor is positioned in a lowered position with respect to said at least one of a plurality of stators.
16. (Currently Amended) The method of claim 1, further comprising controlling motion of the rotor by selecting frequencies of rotor motion thereby determining a first time interval of confined motion characterized as the time during which the motion of the rotor is limited by motion limiters and direction of motion is reversed reversed, and a second time interval during which the motion of the rotor is not limited, and tuning the frequencies to a desired ratio between the the first time interval and the second time interval.
17. (Original) The method of claim 1, wherein a driving alternating voltage is used to achieve periodic switching frequency of the rotor.
18. (Original) The method of claim 1, wherein the rotor comprises a micro-mirror.

APPLICANT(S): NAFTALI, Matan et al.
SERIAL NO.: Not yet assigned
FILED: Herewith
Page 5

19. (Original) A vertical comb drive device comprising:

a rotor comb element, the rotor element comb comprising a main body and a plurality of substantially parallel extensions in a comb arrangement, and at least one of a plurality of stator comb elements, comprising a main body and a plurality of substantially parallel extensions in a comb arrangement, adapted to be interlaced with the rotor, all on a single layer of a substrate.

20. (Original) The device of claim 19, wherein said at least one of a plurality of stators comprise two, substantially opposite stators, wherein the rotor is located between the two stators.

21. (Original) The device of claim 19, wherein said at least one of a plurality of stators are positioned and secured in position using glue.

22. (Original) The device of claim 19, wherein displacement limiters are used to limit displacement of the rotor.

23. (Original) The device of claim 22, wherein the displacement limiters comprise edges of slits in a surrounding body.

24. (Original) The device of claim 19, wherein the rotor and said at least one of a plurality of stators are each suspended on flexible supports.

25. (Original) The device of claim 24, wherein the flexible supports are used to reposition the rotor with respect to said at least one of a plurality of stators, so as to achieve realignment.

26. (Original) The device of claim 24, wherein the flexible supports have nonlinear kinematic-dependent rigidity.

27. (Currently Amended) The device of claim 19, wherein the rotor is provided with two substantially opposite torsion bars that define a rotation axis substantially substantially near an external surface of the rotor.

APPLICANT(S): NAFTALI, Matan et al.
SERIAL NO.: Not yet assigned
FILED: Herewith
Page 6

28. (Original) The device of claim 27, wherein the external surface is an upper surface.
29. (Original) The device of claim 27, wherein the external surface is a bottom surface.
30. (Original) The device of claim 19, wherein the thickness of the extensions of said at least one of a plurality of stators is greater than the thickness of extensions of the rotor.
31. (Original) The device of claim 19, wherein the rotor is positioned in an elevated position with respect to said at least one of a plurality of stators.
32. (Original) The device of claim 19, wherein the rotor is positioned in a lowered position with respect to said at least one of a plurality of stators.
33. (Original) The device of claim 19, wherein a driving alternating voltage is used to achieve periodic switching frequency of the rotor.
34. (Original) The device of claim 19, wherein the rotor comprises a micro-mirror.
- 35-36. (Cancelled)